Amendments to the Specification

Please replace the existing paragraphs with the following amended paragraphs:

[0008] It is known to seek to control overwashing by monitoring the liquid state as it leaves the centrifuge case. FIG. 1 of the accompanying drawings shows a typical industrial centrifuge comprising a perforated cylindrical basket/drum 10 which has a perforated outer surface and is rotatable about a vertical axis 12 on a motor driven shaft 14. The perforated basket 10 has a screen 15 on its cylindrical inner surface and is contained within a cylindrical outer casing 16 having an outlet pipe 18 at its lower end for leading off liquids centrifugally separated from solids 20. A pipe 22 enables a wash liquid to be sprayed onto the solids 20 in the basket retained by the screen 15.

[0011] In an industrial centrifuge, the time period for the wash liquid to reach the outlet pipe from the basket perforations is typically between 5 and 30 seconds. Thus any measurement of the state of the wash liquid immediately after the point of contact with the solids will be delayed by at least this time during which overwashing may have occurred. Thus a flow time of 20 seconds [:trom] from perforations/screen to the outlet to provide a minimum (ideal) solids wash time of 20 seconds requires 40 seconds total wash time and results in a 100% overwashing. These weaknesses are most marked on large centrifuges processing viscous liquids.

[0050] In the embodiment of FIGS. [2 and 3] 3 and 4, the transducer 28 is flush mounted on the inside wall of the casing 16 such as to maintain a near cylindrical inner surface of the casing and to intercept the liquid flow immediately it leaves the basket perforations to measure its conductance. The preferred form of transducer has two or more electrically conductive strips/electrodes 30 set in an electrical insulating substrate 32 and, if more than two, connected alternately, or to a predetermined pattern 34, as inducted by the dotted lines in FIG. 3.

[0052] In alternative forms of the transducer two or more shapes 37, which can be rectangular, triangular, arcuate, spiral etc., mounted in a pattern on a substrate with the insulated distance "t" defined between end shape. FIG. 5 shows such a device using [triangul(jJ] triangular shapes and FIG. 6 with arcuate shapes. The shapes/strips are connected via connections 36 in an electrical circuit using a proprietary A.C. bridge circuit or other electric controller.

[0054] For vertical spindle centrifuges of the type shown in FIG. 2, a rectangular or irregular shaped transducer is used with [it's] its narrow width set circumferentially in the inside of the casing and [it's] its long side set at or near vertical--extending lengthwise over a sufficient portion of the casing height to cover any liquid flow irregularities down the casing. An alternative arrangement of a series of small transducers set one above the other and connected in parallel

over an area similar to that of the single rectangular transducer would also give the mean conductance value.

[0055] For horizontal spindle centrifuges, not illustrated, a rectangular transducer would be set with [it's] its long side, as a circumferential arc, around the inside of the casing extending over a sufficient portion of the casing circumference to cover any liquid flow irregularities and with [it's] its narrow side set at or near horizontal. Again, an alternative arrangement with a series of small transducers in the form of an arc and connected in parallel over an area similar to that of the single rectangular transducer would also give the mean conductance value.

[0058] Using a suitably dimensioned transducer, the value of [AIV]A/V may be used in Classes X and Y situations to measure and control the degree of contamination of the liquid flowing over the transducer as the electric conductance [A1V]A/V measured at the transducer corresponds to an equivalent contamination level. A typical relationship between conductivity and levels of contamination (organic salts, chloride salts, and other solids conductive in solution), applicable to Classes X and Y, is shown in graph A of FIG. 11.

[0059] In other embodiments, the value of [AIV]A/V may be used to measure and control the depth of liquid of constant conductivity flowing over a suitably dimensioned transducer (Class Z). An example of a process in which

depth measured is advantageous is the termination of liquid flow from a centrifuge. At the accepted minimum flow, the reduction in centrifuge utilization in continuing the process cycle is greater than the advantage of further liquid separation. At this point, the transducer [AIV]A/V depth signal proportional to the flow of liquid in the machine casing, signals the end of the centrifuge cycle. An example of Class Z is the centrifugal separation of water from fabrics.

[0061] Returning now to FIGS. 3 and 4, a small auxiliary wash pipe (38) may be fitted in the casing to clean the surface of the transducer and to [recalibrate is] recalibrate it as necessary. If the process temperature varies, a temperature sensing device is fitted to measure the wash liquid temperature and, if required, apply a signal to the bridge/electronic controller to adjust the preset conductance levels.